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APPLICATION NUMBER: 60/519,711  
FILING DATE: November 13, 2003  
RELATED PCT APPLICATION NUMBER: PCT/US04/37939

Certified by



Jon W Dudas

Acting Under Secretary of Commerce  
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PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

MS PROVISIONAL APPLICATION

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION under 37 C.F.R. § 1.53(b)(2).

INVENTOR(s)/APPLICANT(s)			
LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND STATE/ FOREIGN COUNTRY)
Herman	Timm		6277 Sugartown Road Ellicottville, NY 14731
TITLE OF THE INVENTION (280 characters max)			
VISCOUS MATERIAL DISPENSER PISTON			
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STATE	Ohio	ZIP CODE	COUNTRY
		44199-0839	U.S.A.
ENCLOSED APPLICATION PARTS (check all that apply)			
Specification Number of Pages	2	Applicant is claiming small entity status under C.F.R. §§ 19., 1.27	
Drawing(s) Number of Sheets	5	Other (specify)	
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION (check one)			
<input checked="" type="checkbox"/> A check is enclosed to cover the filing fees		FILING FEE AMOUNT(S) \$ <u>80.00</u>	
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge additional filing fees and credit Deposit Account No. <u>23-0630</u>			

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government. ☒ NO.

Respectfully submitted,

SIGNATURE: Thomas E. Fisher  
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DATE: November 13, 2003

## Viscous Material Dispenser Piston

### Background

Viscous material dispensers, some of which are known as caulking guns, are now well known. A dispenser described and claimed in United States Patents 5,775,539 and 5,909,830 issued July 7, 1998 and June 8, 1999 (herein The Patents) disclose a high pressure dispenser that has enjoyed commercial success. The dispenser's success has been in mixing and dispensing two part materials of very high viscosity. An example of such a material is that material which is used in installing replacement windshields and rear windows in automobiles.

With the dispenser of The Patents, a problem exists when one particular two part material which is supplied in individual units where a "sausage bag" which encases the material is made from thin metal foil. The foil all too frequently bypasses the flexible lip of a piston of the type described and claimed in The Patents and extends between the piston and a surrounding, close fitting, wall of the dispenser.

### Description of Photographs and Accompanying Comments

Sheet 1 is a photo print of a perspective view showing the components of an improved flexible piston 10 and an expansion plate 12.

Sheet 2 is a photo print providing a side elevational view showing the plate 12 slid into the piston within a piston lip 14 and concentrically mounted around a plate locating projection 16.

Sheet 3 shows the expansion plate mounted in the forward end of the piston with the

assembled piston and plate secured to a piston rod (not shown) by a fastener 18.

Sheet 4 shows the now standard piston which will be replaced by the novel and improved assembly of sheets 1-4; and ,

Sheet 5 illustrates the problem overcome by the piston assembly of sheets 1-3 showing a foil sausage bag which has been extruded into the space between the pictured standard piston and a cylindrical bore of a dispenser.

The outer perimeter of the expansion plate 12 is tapered such that it acts to wedge the plastic piston lip 14 against a wall of the gun cylinder. This wedging action prevents the problem illustrated in Figure 5. As a result, foil material advantageously remains contained within the flexible piston lip 14.

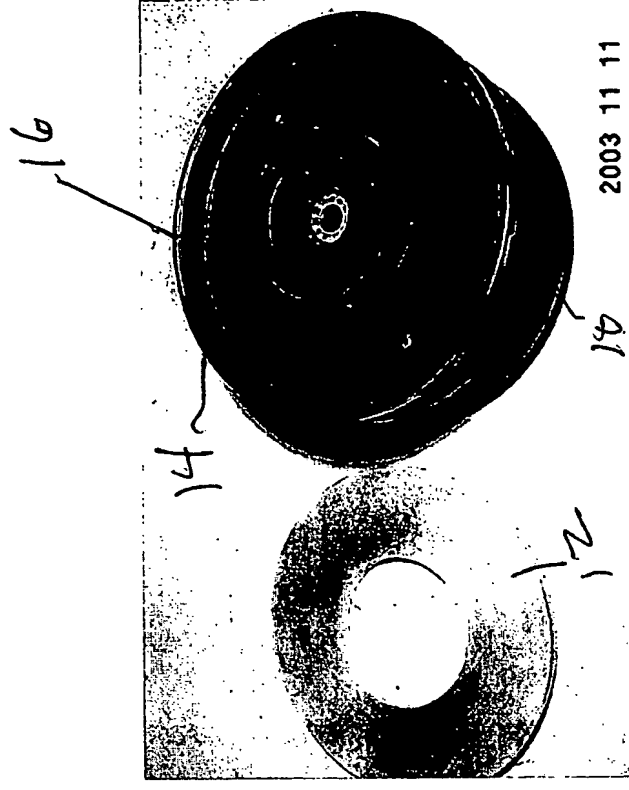
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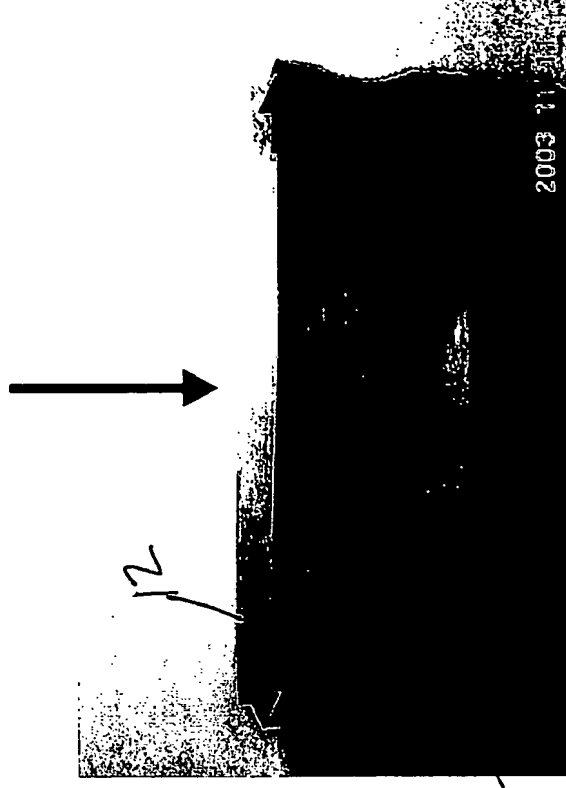
## Meritool Active Piston

- The active piston is a two piece assembly comprised of piston with flexible lip, and a rigid expansion plate. Shown here are a nylon piston and aluminum plate
- The active piston creates a superior sealing radial force of important in several types of adhesive dispensing.



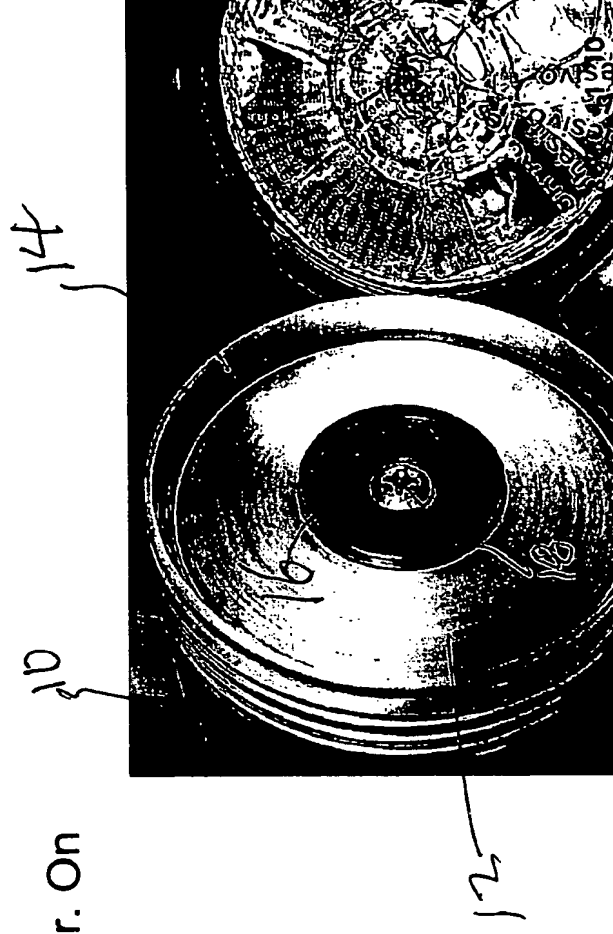
## Meritool Active Piston

- The plate slides in to the piston – shown partially inserted here to demonstrate the angled edge of the plate.
- Vertical (black) arrow shows direction of force exerted by the adhesive on the expansion plate.
- Horizontal (red) arrow shows direction of expanding force exerted by expansion plate upon the flexible piston lip.



## Meritool Active Piston

- The active piston is shown assembled in to the cylinder. On the right is a fully extruded adhesive sausage.



## Meritool Active Piston

- The standard piston is shown at right. Note that it has a flexible lip, but no expansion plate.



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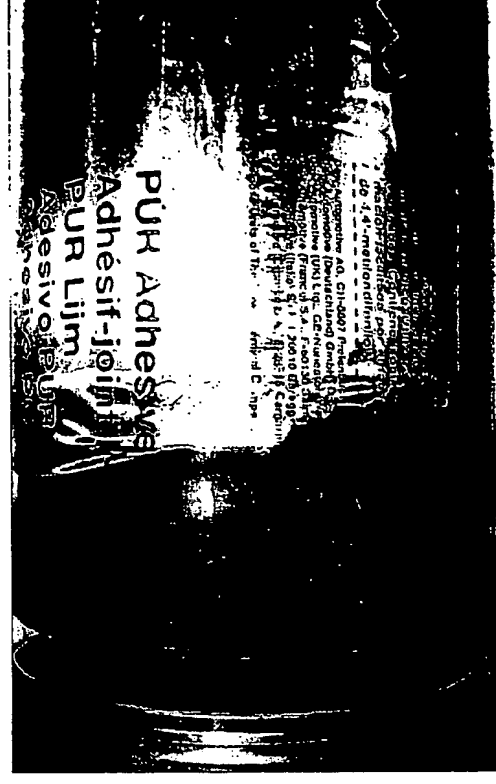
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## Meritool Active Piston

- A failure of the standard piston is shown at right. The sausage bag – typically a thin foil material bypasses the flexible lip of the piston, resulting in a time consuming mess cleanup and lost productivity.



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